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STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9011

DEPARTMENT OF TRANSPORTATION

May 14, 1999

EPA-Ms Bonnie Lavelle
Mail Code 8EPR-SR
999 18th St.
Denver,Colorado 80202

Dear Ms. Lavelle,

Please find enclosed a copy of the Amendment: Materials Management Plan for Phase 3 Construction, I-70 Modifications, Brighton Blvd. to Humboldt Ave. dated May 6, 1999. This Amendment will be implemented by CDOT's construction contractor for the next phase of construction for the improvements on I-70 and on the north side of I-70 between Humboldt and High St. I have also included the environmental specifications for Health & Safety Management, Erosion Control, and Contractor Source Material which are referenced in the Amendment and will be implemented on the Phase 3 project.This document has incorporated the review comments of both CDPHE and EPA. CDOT will consider placing deed restrictions on properties that will be transferred to other owners after the project is completed. It should be noted,however, that CDOT will have difficulty in ensuring or enforcing that these restrictions are adhered to. Please contact me @ 757-9787 if questions.

Sincerely,

Jim Paulmeno
Project Manager

cc. Martinek
Aberle
Meacham
Beckham/Sherman

SECTION 106
CONTROL OF MATERIALS

Subsection 106.02 (b) shall include the following:

Any source of imported embankment or topsoil shall include the following certification. The Contractor shall assure and certify that unacceptable levels of hazardous waste and substances; including but not limited to those defined in the Code of Federal Regulations, 40 CFR Part 261 Subparts C and D, and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section 101(14) as amended; are not incorporated into the project as a result of importing embankment or topsoil materials. The Contractor shall submit such certification to the Engineer, signed and stamped (or sealed) by either a certified industrial hygienist (CIH), certified hazardous materials manager (CHMM), registered professional engineer (PE), Certified Safety Professional (CSP), or Registered Environmental Manager (REM) for each contractor source outside of the project limits.

If contractor source material for embankment or topsoil, originating outside of the project limits, is placed on the project and is found to be contaminated with unacceptable levels of hazardous waste or substances, the Contractor shall remove the contaminated material from the Department's right of way, dispose of it in accordance with applicable laws and regulations, and make necessary restoration.

The cost of complying with these requirements, including sampling, testing, and corrective action by the Contractor, shall be included in the work.

May 7, 1999

SECTION 208
EROSION CONTROL

NOTICE

This is a standard special provision that revises or modifies CDOT=s *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT=s Staff Design Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions issued by Staff Design unless such use is first approved by the Specification Unit of Staff Design. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

INSTRUCTIONS FOR USE ON CDOT CONSTRUCTION PROJECTS:

Use this standard special provision on projects subject to an NPDES Permit, and projects that include any of the erosion control work identified in subsection 208.04. Do not use on projects, such as overlay projects, that have no earth disturbance other than minor shouldering work, unless the disturbed earth is expected to be subject to significant erosion.

SECTION 208
EROSION CONTROL

Section 208 is hereby added to the Standard Specifications for this project as follows:

DESCRIPTION

208.01 This work consists of constructing, installing, maintaining, and removing when required, erosion control measures during the life of the Contract to prevent or minimize erosion, sedimentation, and pollution of any state waters as defined in subsection 107.25, including wetlands.

The Contractor shall coordinate the construction of temporary erosion control measures with the construction of permanent erosion control measures to assure economical, effective, and continuous erosion control throughout the construction period.

MATERIALS

208.02 The material for erosion control measures shall conform to the following:

(a) **Erosion bales:** Material for erosion bales shall consist of Certified Weed Free hay or straw. The hay or straw shall be certified under the Colorado Department of Agriculture Weed Free Forage Certification Program and inspected as regulated by the Weed Free Forage Act, Title 35, Article 27.5., CRS. Each certified weed free erosion bale shall be identified by one of the following:

(1) One of the ties binding the bales shall consist of blue and orange twine, or
(2) One of the ties binding the bale shall consist of specially produced shiny galvanized wire, or
(3) The bale shall have a regional Forage Certification Program tag indicating the Regional Forage Certification Program Number.

Erosion bales shall be inspected for and Regionally Certified as weed free based on the Regionally Designated Noxious Weed and Undesirable Plant List for Colorado, Wyoming, Montana, Nebraska, Utah, Idaho, Kansas, and South Dakota.

The Contractor shall not unload certified weed free erosion bales or remove their identifying twine, wire or tags until the Engineer has inspected and accepted them.

The Contractor shall provide a certificate of compliance showing the transit certificate number or a copy of the transit certificate as supplied from the forage producer.

The Contractor may obtain a current list of Colorado Weed Free Forage Crop Producers who have completed certification by contacting the Colorado Department of Agriculture, Division of Plant Industry, 700 Kipling Street, Suite 4000, Lakewood, Co 80215, (303) 239-4149.

Bales shall be approximately 5 cubic feet (0.14 m^3) of material and weigh not less than 35 pounds (16 kg).

(b) **Silt Fence.** Silt fence posts shall be metal or wood with a minimum length of 42" (1 m). Metal posts shall be "studded tee" or "U" type with minimum weight of 1.33 pounds per linear foot (1.98 kg/m). Wood posts shall have a minimum diameter or cross section dimension of two inches (50 mm). Silt fence geotextile shall conform to subsection 712.08(b). Geotextile shall be attached to posts with three or more staples per post.

(c) **Temporary Berms.** Temporary berms shall be constructed of compacted soil.

(d) **Temporary Slope Drains.** Temporary slope drains shall consist of fiber mats, plastic sheets, stone, concrete or asphalt gutters, half round pipe, metal or plastic pipe, wood flume, flexible rubber or other materials suitable to carry accumulated water down the slopes.

(e) **Brush barrier.** Brush barriers shall consist of brush, limbs, root mat, vines, soil, rock, or unmerchantable timber. The erosion control geotextile that covers the barrier shall conform to subsection 712.08(b).

(f) **Check Dam.** Check dams shall be constructed of stone, logs, or wooden timbers. Stone shall meet the requirements of section 506.

(g) **Outlet Protection.** Outlet protection riprap shall conform to Section 506. Erosion control geotextile shall conform to subsection 712.08(b).

(h) **Sediment Trap and Basin.** In constructing an excavated Sediment Trap or Basin, excavated soil may be used to construct the dam embankment, provided the soil meets the requirements of Section 203.

CONSTRUCTION REQUIREMENTS

208.03 Project Review, Schedule, and Erosion Control Supervisor.

(a) **Project review.** The Contractor may submit modifications to the Contract's erosion control measures in a written proposal to the Engineer. Such proposed modifications shall be submitted at least 10 working days prior to the beginning of any construction work. The written proposal shall include the following minimum information:

(1) Reasons for changing the erosion control measures.
(2) Diagrams showing details and locations of all proposed changes.
(3) List of appropriate pay items indicating new and revised quantities.
(4) Schedules for accomplishing all erosion and sediment control work.
(5) Effects on permits or certifications caused by the proposed changes.

The Engineer will approve or reject the written proposal in writing within two weeks after the submittal. The Engineer may order additional control measures prior to approving the proposed modifications. The Contractor shall be responsible for amendments to permits or certifications required as a result of the approved changes. Modifications to the erosion control measures shall not be reason for extension of contract time.

(b) **Schedules.** At least 10 working days prior to the beginning of any construction work, the Contractor shall submit for approval a schedule for accomplishment of temporary and permanent erosion control work. This schedule shall specifically indicate the sequence of clearing and grubbing, earthwork operations, and construction of temporary and permanent erosion control features. The schedule shall include erosion and sediment control work for all areas within the project boundaries, including but not limited to, haul roads, borrow pits, and storage and plant sites. Work shall not be started until the erosion and sediment control schedule has been approved in writing by the Engineer.

Once the work has started, and during the active construction period, the Contractor shall update the schedule for all erosion and sediment control work on a weekly basis, and submit the updated schedule to the Engineer. If during construction the Contractor proposes changes that would affect the Contract's erosion and sediment control measures, the Contractor shall propose revised erosion and sediment control measures to the Engineer for approval in writing. Revisions shall not be implemented until the proposed measures have been approved in writing by the Engineer.

(c) **Erosion Control Supervisor.** When included in the Contract, the Contractor shall assign to the project an employee to serve in the capacity of the Erosion Control Supervisor (ECS). The ECS shall be a person other than the Superintendent, unless otherwise approved by the Engineer. The ECS shall be experienced in all aspects of construction and have satisfactorily completed an ECS training program authorized by the Department. Proof that this requirement has been met shall be submitted to the Engineer at least 10 working

days prior to the beginning of any construction work. A list of authorized ECS training programs will be provided by the Engineer upon request by the Contractor.

The ECS's responsibilities shall be as follows:

(1) Ensure compliance with all water quality permits or certifications in effect during the construction work.
(2) Directly supervise the installation, construction, and maintenance of all erosion control measures specified in the Contract and coordinate the construction of erosion control measures with all other construction operations.
(3) Direct the implementation of suitable temporary erosion and sediment control features as necessary to correct unforeseen conditions or emergency situations. Direct the dismantling of those features when their purpose has been fulfilled unless the Engineer directs that the features be left in place. If removed, the area in which these features were constructed shall be returned to a condition similar to that which existed prior to its disturbance.
(4) Inspect, with the Engineer or designated representative, all erosion control features implemented for the project. The inspections shall take place at least once every 14 calendar days and after each storm event that causes surface runoff. A report shall be submitted to the Engineer after every inspection and shall become part of the Department s project records. The appropriate form for this report will be supplied by the Engineer. The inspections shall be made during the progress of the work, during work suspensions, and until final acceptance of the work. During project suspensions, inspections shall take place at least once every 30 calendar days, or as directed.
(5) Attend all project-scheduling meetings.
(6) Upon the Engineer s request, implement necessary actions to reduce anticipated or presently existing water quality or erosion problems resulting from construction activities. The criteria by which the Engineer initiates this action may be based on water quality data derived from monitoring operations or by any anticipated conditions (e.g., predicted storms) which the Engineer believes could lead to unsuitable water quality situations.
(7) Make available, upon the Engineer's request, all labor, material, and equipment judged appropriate by the Engineer to install and maintain suitable erosion and sediment control features.

208.04 Erosion Control.

(a) **Unforeseen Conditions.** The Contractor shall design and implement erosion and sediment control measures for correcting conditions unforeseen during the design of the project, or for emergency situations, that develop during construction. The Department s "Erosion Control and Stormwater Quality Guide" shall be used as a reference document for the purpose of designing erosion and sediment control measures. Measures and methods proposed by the Contractor shall be reviewed and approved in writing by the Engineer prior to installation.

(b) **Work Outside the Right-of-Way.** In areas outside the right-of-way that are used by the Contractor and which include, but are not limited to, borrow pits, haul roads, storage and disposal areas, maintenance, batching areas, etc., erosion and sediment control work shall be performed by the Contractor at the Contractor's expense.

(c) **Construction Implementation.** The Contractor shall incorporate into the project all erosion and sediment control features, as outlined in the accepted schedule.

(d) **Stabilization.** Permanent stabilization is defined as the covering of disturbed areas with final seed and mulch as indicated on the plans. When required by the plans, an erosion control blanket shall be used in combination with the final seed and mulch. Temporary stabilization is defined as the covering of disturbed areas with seed, mulch, mulch with a tackifier, or a combination seed/mulch/tackifier. Other permanent or temporary soil stabilization techniques may be proposed, in writing, by the Contractor and used upon approval, in writing, by the Engineer.

The surface area of erodible earth material exposed at one time by clearing and grubbing, and earthwork operations shall not exceed 34 acres (13.8 ha): 17 acres (6.9 ha) for clearing and grubbing plus 17 acres (6.9 ha) for earthwork operations. The Contractor shall permanently stabilize each 17 acre (6.9 ha) increment of the project immediately upon completion of the grading of that section. Once earthwork has begun on a section, it shall be pursued until completion. If approved by the Engineer, slopes from the edge of pavement to the point of slope selection may be left unseeded until paving has been completed.

The duration of the exposure of uncompleted construction to the elements shall be as short as practicable. Completed areas shall be permanently stabilized within seven calendar days after completion. Disturbed areas where work is temporarily halted shall be temporarily stabilized within seven days after the activity ceased unless work is to be resumed within 30 calendar days after the activity ceased. Payment for temporary stabilization will be made at the contract unit price if the work was interrupted due to no fault or negligence of the Contractor. Payment will not be made for temporary stabilization required by Contractor's negligence, by the lack of proper Contractor scheduling or for the convenience of the Contractor.

Clearing and grubbing operations shall be scheduled and performed so that grading operations and permanent stabilization measures can follow immediately thereafter if the project conditions permit. Otherwise, temporary stabilization measures may be required between successive construction stages. No payment will be made for additional work required because the Contractor has failed to properly coordinate the entire erosion control schedule, thus causing previously seeded areas to be disturbed by operations that could have been performed prior to the seeding. Upon failure of the Contractor to coordinate the permanent stabilization measures with the grading operations in a manner to effectively control erosion and prevent water pollution, the Engineer will suspend the Contractor's grading operations and withhold monies due to the Contractor on current estimates until such time that all aspects of the work are coordinated in an acceptable manner.

(e) **Maintenance.** The Contractor shall continuously maintain all erosion and sediment control features so that they function properly during construction and work suspensions until the project is accepted.

From the time seeding and mulching work begins until the date the project is declared complete, the Contractor shall keep all seeded areas in good condition at all times. Any damage to seeded areas or to mulch materials shall be promptly repaired as directed.

In the case of repeated failures on the part of the Contractor in controlling erosion, sedimentation, or water pollution, the Engineer reserves the right to employ outside assistance or to use Department forces to provide the necessary corrective measures.

If the Contractor fails to maintain the erosion and sediment control features in accordance with the Contract, or as directed by the Engineer, the Engineer may at the expiration of a period of 48 hours, after having given the Contractor written notice, proceed to maintain the features as deemed necessary.

Temporary erosion and sediment control measures shall remain upon completion of the project unless otherwise directed by the Engineer. At the completion of the Contract, removed salvageable temporary erosion control items shall become the property of the Contractor.

(f) **Disposal of sediment.** Sediment removed during maintenance of erosion control features shall be used in or on embankment provided the sediment meets conditions of Section 203, or it shall be wasted in accordance with subsection 107.25.

208.05 Construction of Erosion Control Measures. Erosion control measures shall be constructed as specified in the Contract and in accordance with the following specifications.

(a) **Seeding, Mulching, Sodding, Soil Retention Blanket.** Seeding, mulching, sodding, and soil retention blanket shall be performed in accordance with Sections 212, 213, and 216.

(b) **Erosion Bales.** The bales shall be placed embedded into the soil and shall be anchored securely to the ground with wood stakes. Stakes shall have a minimum diameter or cross section dimension of two inches (50 mm). Re-bars shall not be used. Gaps between bales shall be filled with Certified Weed Free mulch to obtain tight joints.

(c) **Silt Fence.** Silt fence shall be installed in locations specified in the Contract prior to any grubbing or grading activity. Sediment shall be removed from behind the silt fence when it accumulates to one half the exposed geotextile height and shall be disposed of in accordance with subsection 208.04(f).

(d) **Temporary Berms.** Berms shall be constructed to the dimensions shown in the Contract, graded to drain to a designated outlet, and compacted with a minimum of two passes of a rubber tire vehicle, preferably a grader wheel.

(e) **Temporary Diversion.** Unless otherwise specified in the Contract or directed, the diversion's ridge and channel shall be stabilized within 14 calendar days of its installation. The diversion shall be installed prior to any up slope land disturbance.

(f) **Temporary Slope Drains.** Temporary slope drains shall be installed prior to installation of permanent facilities or growth of adequate ground cover on the slopes. All temporary slope drains shall be securely anchored to the slope. The inlets and outlets of temporary slope drains shall be protected to prevent erosion.

(g) **Brush Barrier.** The barrier shall be constructed at the time of clearing and shall be covered by an erosion control geotextile.

(h) **Check Dam.** Logs shall be obtained, if possible, from clearing operations on the project. Sediment shall be removed from behind the check dam when it has accumulated to one half of the original height of the dam and shall be disposed of in accordance with subsection 208.04(f).

(i) **Outlet Protection.** Geotextile used shall be protected from cutting or tearing. Overlaps between two pieces of geotextile shall be one foot (300 mm) minimum.

(j) **Storm Drain Inlet Protection.** Storm drain inlet protection measures shall be constructed in locations and with materials and techniques specified in the Contract. Construction shall be in a manner that will facilitate maintenance, and minimize interference with construction activities.

At excavated drop inlet sediment traps, sediment shall be removed when it has accumulated to one-half the design depth of the trap and shall be disposed of in accordance with subsection 208.04(f).

(k) **Sediment Trap and Basin.** Sediment traps or basins shall be installed before any land disturbance takes place in the drainage area. Area under the embankment shall be cleared, grubbed, and stripped of all vegetation and root mat. Embankment construction shall conform to Section 203. Sediment shall be removed from the trap or basin when it has accumulated to one half of the wet storage depth of the trap or basin and shall be disposed of in accordance with subsection 208.04(f).

208.06 Failure to Perform Erosion Control. The Contractor will be subject to a disincentive for incidents of failure to perform erosion control as required by the Contract. Incidents to which this disincentive may be applied include the following:

(1) Failure to submit an initial schedule or failure to submit a weekly schedule update as specified in subsection 208.03(b).
(2) Failure of the Erosion Control Supervisor to perform the inspections required by subsection 202.03(c)4.
(3) Failure of the Erosion Control Supervisor to implement necessary actions requested by the Engineer as required by subsection 208.03(c)6.

(4) Failure to design and implement erosion and sediment control measures for unforseen conditions as required by subsection 208.04(a).
(5) Failure to construct or implement erosion control or spill containment measures required by the Contract, or failure to construct or implement them in accordance with the Contractor's approved schedule as required by subsection 208.04(c).
(6) Failure to limit the exposed surface area of erodible earth to 34 or fewer acres (13.8 or fewer ha) as required by subsection 208.04(d).
(7) Failure to temporarily stabilize areas where work is temporarily halted within 7 days as required by subsection 208.04(d).
(8) Failure to perform maintenance of an erosion control feature within 48 hours after notice from the Engineer to perform maintenance as required by subsection 208.04(e).
(9) Failure to remove and dispose of sediment from erosion control features as required by subsection 208.04(f) and subsections 208.05(c), (h), (j), and (k).

The Engineer will notify the Contractor in writing of each incident of failure to perform erosion control, items (1) through (9) above. The Contractor will be allowed 7 calendar days from the date of notification to correct the failure. The Contractor will be charged a $500 disincentive for each calendar day after the seventh day that one or more of the incidents of failure, items (1) through (9) above, remains uncorrected. The disincentive will accumulate, for each cumulative day that one or more of the incidents remains uncorrected. The number of disincentive days will be cumulative for the duration of the project; that is: the disincentive charge for a particular disincentive day will be added to the total number of disincentive days accumulated on the project. Total disincentive will be deducted from any monies due the Contractor.

METHOD OF MEASUREMENT

208.07 Quantities to be measured for erosion control items will be the number of units of the various items described below.

Erosion bales and check dams will be measured by the unit.

Silt fence, temporary berms, temporary diversions, temporary slope drains, and brush barriers will be measured by the linear foot (meter) constructed and accepted. Anchors, connections, and tie downs used for temporary slope drains will not be paid for separately.

Storm drain inlet protection will be measured by the unit as specified in the Contract.

Sediment trap and sediment basin quantities will be measured by the unit which shall include all excavation and embankment required to construct the item. Other materials used to provide for outlet and overflow will be measured and paid for separately.

The Erosion Control Supervisor will not be measured, but will be paid for on a lump sum basis. The lump sum price bid will be full compensation for all work required completing the item.

Any excavation required for removal of accumulated sediment from traps, basins, areas adjacent to silt fences and erosion bales, and all other clean out excavation of accumulated sediment, and the disposal of such sediment, will be paid for on a lump sum basis.

BASIS OF PAYMENT

208.08 Work to furnish, install, maintain, remove, and dispose of erosion and sediment control features specified in the Contract will be paid for at the contract unit price.

Payment will be made under:

Pay Item	**Pay Unit**
Erosion Bales (Weed Free)	Each
Silt Fence	Linear Foot (Meter)
Temporary Berms	Linear Foot (Meter)
Temporary Diversion	Linear Foot (Meter)
Temporary Slope Drains	Linear Foot (Meter)
Brush Barrier	Linear Foot (Meter)
Check Dam	Each
Storm Drain Inlet Protection	Each
Sediment Trap	Each
Sediment Basin	Each
Sediment Removal and Disposal	Lump Sum
Erosion Control Supervisor	Lump Sum

Temporary erosion and pollution control measures required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or ordered by the Engineer or for the Contractor's convenience, shall be performed at the Contractor's expense.

Costs of employing outside assistance or Department forces to provide necessary corrective measures, plus project engineering costs, will be charged to the Contractor, and appropriate deductions will be made from the Contractor's monthly progress estimate. The cost of maintenance of erosion control features performed by the Department will be deducted from any compensation due, or which may become due to the Contractor under this Contract.

Accepted work performed to install measures for the control of erosion and sedimentation, and water pollution, not originally included in the Contract will be paid for as extra work in accordance with subsection 104.03.

Seeding, sod, mulching, soil retention blanket, and riprap will be measured and paid for in accordance with Sections 212, 213, 216, and 506.